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# USSR: 1984 Grain Crop Shortfall Necessitates Massive Imports



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An Intelligence Assessment

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# USSR: 1984 Grain Crop Shortfall Necessitates Massive Imports



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**An Intelligence Assessment**

This paper was prepared by the Strategic  
Resources and Economic Divisions, Office of Global  
Issues, and the Soviet Economy Division, Office of  
Soviet Analysis. 

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Comments and queries are welcome and may be  
directed to the Chief, Agricultural Assessments  
Branch, OGI, 

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**USSR: 1984 Grain Crop Shortfall  
Necessitates Massive Imports**

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**Key Judgments**

*Information available  
as of 30 August 1984  
was used in this report.*

Adverse weather since April in several major grain-producing regions of the USSR has eliminated Moscow's chances this year for even an average grain harvest. Indeed, with normal weather for the remainder of the season, we believe that the crop will come in at about 185 million tons, 10 million tons less than last year's estimated output and 55 million tons below plan.

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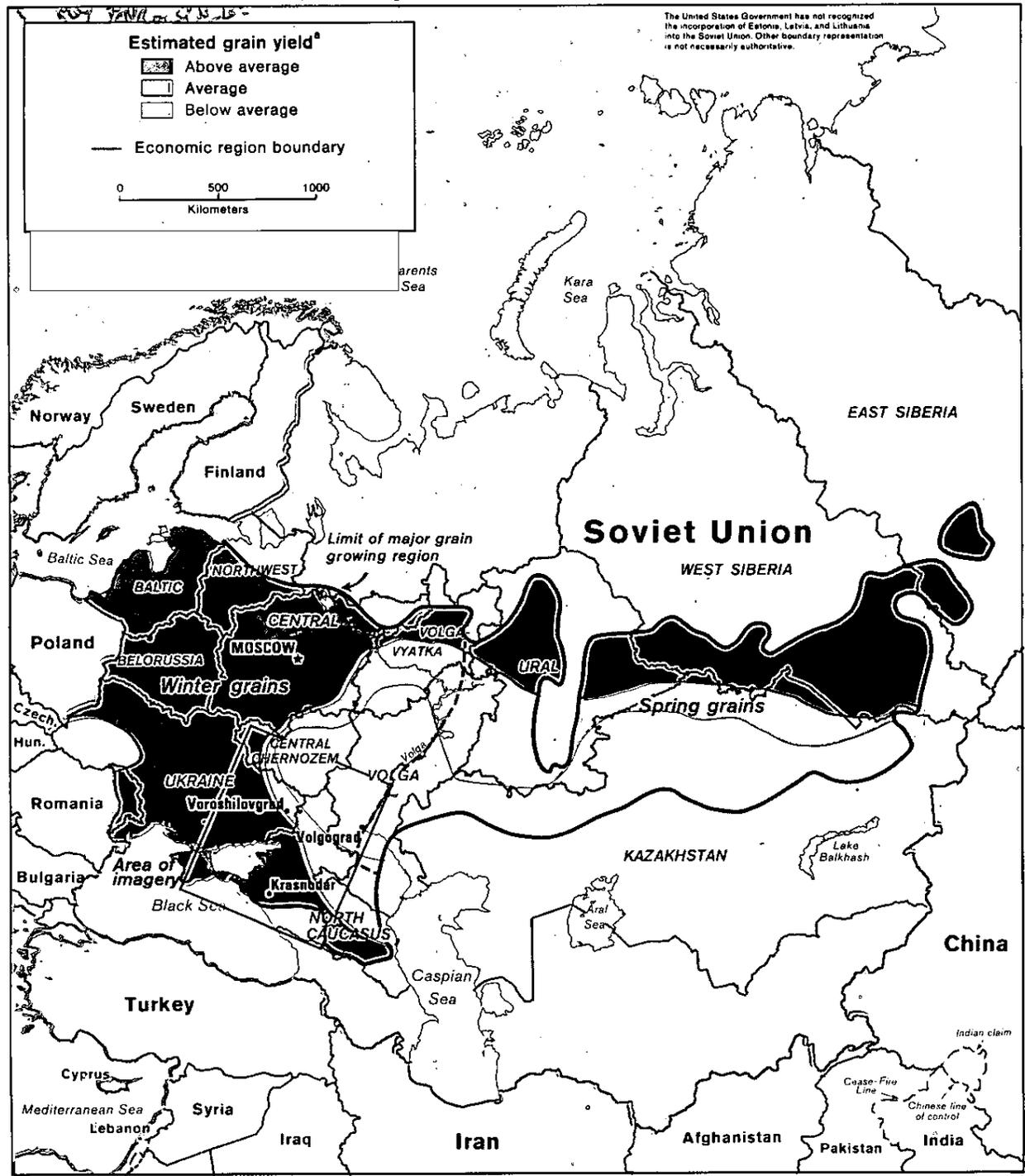
A crop of this size, coupled with prospects for a forage crop no larger than last year's record, means that the USSR will need to import a near-record 45 million tons of grain during the market year that began on 1 July in order to meet its estimated grain requirements. Having already purchased 21-23 million tons by late August, the USSR is now well positioned—both financially and logistically—to accommodate imports of this magnitude. Such heavy buying activity also suggests that Moscow foresees the need for even larger imports or is planning some action—such as stepped-up attacks against Afghan insurgents inside Pakistan, or the introduction of combat aircraft into Nicaragua—that it perceives could precipitate a US embargo. Barring an embargo, the United States probably will supply the largest quantity—at least 15 million tons—of grain imported by the Soviet Union over the coming market year.

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Figure 1  
Estimated Soviet Grain Yields, Late August 1984



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## USSR: 1984 Grain Crop Shortfall Necessitates Massive Imports

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### Introduction

Following four poor-to-mediocre years, overall Soviet agricultural production in 1983 surpassed the previous record set in 1978, although output of most farm products fell short of plan.<sup>1</sup> Our analysis of the latest available information suggests that the 1983 grain crop (about 15 percent of the value of total agricultural output) came in at about 195 million tons, 15 million tons larger than our estimate of the previous year's harvest and the best showing since the 1978 record of 237 million tons. Forage production set a new record for the second consecutive season, and the harvest of most other crops was up over the relatively low 1982 levels as well. Meat and milk output reached record levels, and the number of livestock rose to a new high. [redacted]

Last year's agricultural performance enabled Moscow to improve food supplies while reducing hard currency expenditures for imports of Western farm products in 1983 by about 8 percent—two longstanding goals of the Soviet leadership reaffirmed in the Food Program. Surveys of collective farm markets and state retail stores showed increased supplies of most foodstuffs. Estimated per capita availability of meat in 1983 rose by 3 percent—the largest increase in several years—as a result of record production and imports of meat. Even so, because disposable income grew by a similar amount while meat prices remained constant, queuing and rationing did not decrease substantially. Soviet grain imports during the market year (MY) that ended on 30 June 1984 were roughly equal to those of the previous year. [redacted]

On the basis of the performance of the agricultural sector through July, we estimate that total 1984 output will remain at least at last year's level.<sup>2</sup> We believe that continued growth in the livestock sector—which accounts for more than half of the total—will more than offset the expected downturn in grain

<sup>1</sup> For a more detailed discussion of the 1983 agricultural year in the Soviet Union, see appendix A. [redacted]

<sup>2</sup> Estimates of the value of total agricultural output are derived from the gross output of crops and livestock products, less feed, seed, and waste, using 1970 average realized prices. [redacted]

production this year. Following the 5.4-percent overall growth averaged during 1982-83, this will help keep the Food Program on track, thereby maintaining the credibility of the leadership's commitment to improving the consumer's diet. Continued progress into 1985, however, is being jeopardized by the smaller grain crop, and the possibility that forage supplies—an important source of livestock feed—will fall short of last year's record level. [redacted]

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Under Soviet leader Chernenko, agricultural policy appears to be the same as under his immediate predecessors. Support for the Food Program is being continued, as are efforts to improve the quality and quantity of forage production and to provide material incentives directly to those involved in farm production. The continuity signifies that Chernenko, like Brezhnev and Andropov, hopes to close the gap between domestic supply and consumer demand for quality food through even better agricultural performance, augmented with imports, rather than by increasing retail food prices. [redacted]

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### Crop Developments to Date

Following a good start last fall, prospects for the 1984 Soviet grain crop deteriorated sharply this spring and summer because of adverse weather in some key grain-growing regions. Furthermore, the area sown to grain is one of the smallest in a decade. As a result, even with normal weather for the rest of the year, total Soviet grain production is likely to be only some 185 million tons, 10 million tons less than last year's estimated output, and well below the 205-million-ton average for the 1976-80 period.<sup>3</sup> The US Department of Agriculture currently forecasts the crop at 180 million tons. Estimates by other Western grain analysts range from 170 million to 190 million tons. [redacted]

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<sup>3</sup> The 185-million-ton figure is our best estimate of the 1984 Soviet grain crop, but one that is subject to error. On the basis of our analysis of best and worst case scenarios, there is a 90-percent probability that the crop will come in between 165 million and 195 million tons, and a 75-percent chance that it will range between 175 million and 190 million tons. Thus, we believe that there is more risk than potential for the crop at this point in the season. [redacted]

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**Table 1**  
**USSR: Grain Production <sup>a</sup>**

Million tons

	Actual 1976-80 Average	Estimated <sup>b</sup>			
		1981	1982	1983	1984
<b>Total</b>	<b>205.0</b>	<b>158.0</b>	<b>180.0</b>	<b>195.0</b>	<b>187.0</b>
<b>By crop</b>					
Wheat	99.7	81.0	90.0	80.0	82.0
Coarse <sup>c</sup>	95.1	68.0	80.0	102.0	95.0
Other <sup>d</sup>	10.2	9.0	10.0	13.0	10.0
<b>By republic</b>					
RSFSR	113.9	78.0	99.5	112.0	101.0
Ukraine	43.1	38.2	42.0	39.0	44.0
Kazakhstan	27.5	23.8	19.5	25.0	21.0
Other	20.5	18.0	19.0	19.0	21.0

<sup>a</sup> Measured in bunker weight, that is, gross output from the combine, which includes excess moisture, unripe and damaged kernels, weed seeds, and other trash. For comparison with US or other countries' grain output, an average discount of 11 percent should be applied.

<sup>b</sup> The USSR has not published overall grain production or yield statistics since 1980. Total grain production in 1981 was unofficially reported at 158 million tons. Data for Kazakhstan for 1981 and 1982 are official. All other figures represent our estimates.

<sup>c</sup> Coarse grains comprise rye, barley, oats, corn, and millet.

<sup>d</sup> Other grains include pulses, buckwheat, and rice.

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Moscow's poor crop prospects stem primarily from several episodes of adverse weather. Most damaging was a severe drought during May that devastated crops in and around the Volga Valley—an area that typically produces about one-fourth of the annual Soviet harvest.<sup>4</sup> Imagery from both Landsat and National Oceanic and Atmospheric Administration meteorological satellite (NOAA-7 AVHRR) taken after the drought abated in early June showed that many grainfields had been destroyed and that damage to most of the surviving ones was irreversible. Despite a subsequent improvement in the weather, we expect production throughout the affected region to be well below average.<sup>5</sup>

<sup>4</sup> The areas affected by the drought were the Volga, Volga Vyatka, Central Black Earth, western Kazakhstan, western Urals, and northern North Caucasus regions.

<sup>5</sup> Unless stated otherwise, the term average refers to the 1976-80 period.

Additional losses were incurred during July in Kazakhstan, the Ukraine, and Belorussia. Meteorological data show that about half of the grain crop in Kazakhstan was hit with sukhovey conditions (hot, dry winds) from 9 to 12 July. Soviet weather stations reported temperatures as high as 42 degrees Celsius (107° Fahrenheit) and winds of 10 to 15 knots. Because the sukhovey occurred during the critical flowering period,<sup>6</sup> yields probably were cut by as much as 25 percent.

Thus, it now appears certain that Kazakhstan's crop will be well below average this year.

In the western Ukraine and southern Belorussia, a trip report from the US agricultural attache indicate that prolonged, excessive rainfall there fostered weed growth and disrupted the harvest somewhat, thereby reducing

<sup>6</sup> Flowering is the stage of crop development when maximum potential yields are determined.

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both grain quality and quantity. These problems, however, have been more than offset by better crop prospects elsewhere in the two republics.

[Redacted]

[Redacted] we estimate grain production in both republics (a fourth of the total crop) to be above average.

[Redacted]

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A secondary factor limiting this year's potential crop size is grain hectareage. On the basis of statistics released by the USSR's Central Statistical Administration in early June, we believe that the final harvested grain area will total only about 121 million hectares, the second smallest since 1972 and well below the 124.5-million-hectare average of the past five years.<sup>7</sup> Assuming average yields, such a decrease in hectareage produces a loss of some 5 million tons of potential grain production. [redacted]

The outlook for the 1984 crop would be even worse were it not for the good-to-excellent prospects elsewhere in the Soviet grain belt:

- In the *Baltic, Central, and Northwest Regions*, the persistence of mostly favorable weather throughout the crop season augurs well for bumper harvests there.
- *Siberia* appears headed for a record or near-record grain crop in 1984, largely because of above-normal rainfall this summer [redacted]

- In the *North Caucasus Region*, preliminary yield data from *Krasnodar Kray* confirm our estimate of a good harvest there. Soviet press reports also indicate that grain quality in the entire region is exceptionally high. [redacted]

**Outlook for the 1984 Grain Crop**

Even if the weather is normal for the rest of the year, we believe that the 1984 Soviet grain crop will come in at only some 185 million tons, 10 million tons less than last year's estimated output and well below the 1976-80 average of 205 million tons. With only about two months remaining in the season, however, there is no guarantee that the Soviets will be able to harvest a crop of this size. Although the most critical stages of development already have passed, substantial reductions in both quantity and quality can still occur. For

<sup>7</sup> The cutback in grain area appears to be a consequence of Moscow's policy to greatly expand the amount of arable land put into fallow. Between 1977 and 1983, the harvested grain area of the USSR declined steadily from a record high of 130.4 million hectares to 120.8 million, while fallow increased from 11.7 million hectares to 19.5 million. [redacted]

example, extremely wet conditions during the second half of the harvest—just now under way—or an early onset of winter could force Soviet farmers to cut grainfields prematurely or abandon them entirely. In 1980, when such conditions were widespread, losses were estimated to have totaled about 10 million tons.

On the other hand, several factors could have a positive impact on the outcome of the harvest. The Soviet midyear plan fulfillment results show that deliveries of fertilizer to farms matched last year's record-level. Because Siberia and parts of the European USSR have received adequate rainfall this summer, grain yields in those areas could exceed the bumper yields already incorporated into our 185-million-ton figure. In addition, we estimate that the amount of grain growing on land that was previously fallow is somewhat larger than in recent years. Although fallowing sacrifices production in the year in which the land is idled, it usually results in higher, more stable yields in subsequent years as long as the fallowed hectareage is maintained in the crop rotation schedule. [redacted]

**Outlook for Other Crops**

As of late August, prospects for the major nongrain crops in the USSR—sunflowers, sugar beets, potatoes, vegetables, and cotton—are mixed. Production of sunflowers and sugar beets is expected to be above the average of the past five years, while that of potatoes and cotton is estimated to be somewhat below the average. An average vegetable harvest is now likely. [redacted]

The outlook for the harvests of selected forages—hay, haylage, silage, and grassmeal—has improved markedly in recent weeks. Because of a later start in harvesting this year, forage procurement as of early July was running some 20 percent behind the record 1983 level, according to data released by the USSR Central Statistical Administration. By late August, however, the gap had been narrowed to about 7 percent. With favorable weather for the rest of the season, the deficit could well be eliminated, ensuring adequate supplies of these feeds into 1985. Harvested forages—in terms of nutrient content—make up about one-half of the livestock ration in the USSR. [redacted]

<sup>8</sup> For a more detailed discussion of these crops, see appendix B. [redacted]

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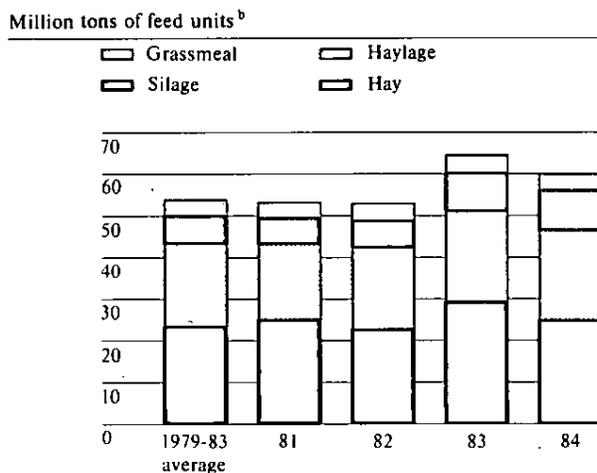
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**Figure 3**  
**USSR: Cumulative Procurement of Selected Harvested Forages, 1979-84<sup>a</sup>**



<sup>a</sup> As of 20 August.  
<sup>b</sup> One million tons of feed units contains the nutrient equivalent of 1 million tons of oats.

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**Grain Imports During MY 1984/85**

**Moscow's Need for Grain.** Soviet grain imports during the marketing year that began on 1 July 1984 will depend largely on the size of the domestic grain and forage crops. If the 1984 grain harvest comes in at 185 million tons, the USSR would be some 45 million tons short of the amount of grain we believe necessary to maintain current levels of seed, food, and industrial use; to achieve planned output targets for meat, milk, and eggs; and to continue expanding livestock production into 1985.<sup>9</sup> Performance in the livestock sector through July indicates that 1984 goals can be achieved, perhaps even exceeded, if Moscow continues to import grain at rates implied by recent buying activity, and if supplies of nongrain feeds remain

<sup>9</sup> Because the USSR measures grain production from the field before cleaning and drying, our bunker-weight estimate of output must be reduced by an average of 11 percent to be comparable with the international standard weight measure for seed, food, imports, and other items. The discount varies according to moisture conditions prior to and during harvest and according to crop size, and thus can become either larger or smaller than average as the season advances. Our current estimates indicate a standard weight crop of roughly 165 million tons (given a bunker-weight crop of 185 million tons) and consumption needs of about 210 million tons.

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**Estimating Soviet Grain Requirements**

Just as our estimate of Soviet grain production is subject to uncertainty at this point in the crop season, so is our estimate of Soviet grain requirements, especially the amount of grain needed for livestock feed. Our estimates of grain quantities required for seed, food, industrial purposes, and export are fairly reliable.

Estimates of grain for feed are based on Soviet literature defining the amounts of grain and roughages needed to produce meat and other livestock products, as well as to support growth in livestock herds. Such estimates assume that the mix of feed does not change.

Our understanding of the linkages between feed inputs and livestock output, however, is constrained significantly by the paucity of published data. For example, data on quantities of feed used in 1983 are not yet available, nor are data on the shares of grain, roughages, and other feeds in the ration. Moreover, because Soviet feed rations are deficient in protein and other important nutrients, Western standards cannot be used to estimate feed requirements.

We know that the mix of feed also changed somewhat during 1980-82. The leadership's campaign to cut the inefficient use of costly grain and to increase production of harvested forages succeeded in lowering the share of grain in the total feed ration from about 30 percent in 1980 to about 29 percent in 1982. Should this decline continue, our calculation of grain needed for feed this crop year would be too high, perhaps by as much as 5 million tons. If, on the other hand, the share of grain in the ration increases as a result of the possible shortfall in forage production, our estimate would be several million tons too low. These scenarios assume that the Soviets will maintain current high levels of animal productivity. In yet a third possibility, should the leadership decide to accept reduced levels of animal productivity—as it has done in the past—our estimate of grain needs would again be too high.

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**Table 2**  
**USSR: Grain Purchases for Delivery**  
**During the July-June Marketing Year**

Million tons

	1983/84 Purchases	1984/85		
		Purchases to Date	Additional Commitments Under LTAs	Total Commitments
<b>Total</b>	<b>32.0</b>	<b>21.25-22.75</b>	<b>8.1</b>	<b>29.35-30.85</b>
United States	10.4	12.0	2.6	14.6
Canada	6.3	5.0	1.5	6.5
Argentina	6.9	1.0	3.0	4.0
European Economic Community	3.8	2.5-4.0	0.0	2.5-4.0
Australia	1.7	0.75	0.0	0.75
Other	2.9	0.0	1.0	1.0

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adequate. Meat output on state and collective farms—about two-thirds of the total—is running well ahead of last year's record level, largely because of record herd inventories<sup>10</sup> and substantially increased animal productivity (more meat per animal). [redacted]

With the need for imported grain at record levels, however, political factors will also come into play in determining the size of grain imports. For example, the leadership will have to rank the importance of achieving plans for the production of meat and milk against the goal of reducing Soviet dependence on the West. [redacted]

**Early Grain-Buying Activity.** The USSR has moved unusually early to line up substantial quantities of foreign grain for import during MY 1984/85 (1 July 1984–30 June 1985). Purchases for the year already stand at some 21 million to 23 million tons, half of the USSR's estimated needs, and about two-thirds of the total amount of grain imported in MY 1983/84. In addition to these confirmed purchases, Moscow is committed to buy another 8.1 million tons of grain under long-term agreements with several countries. [redacted]

The Soviets have been most active in the US grain market, purchasing 12 million tons since early July. After buying 2 million tons of wheat for July-September shipment, Moscow lined up grain for shipment during the October-December period, including 6.9 million tons of new-crop corn, and 1.4 million tons of wheat. Purchases since early August included 550,000 tons of old-crop corn and 1.3 million tons of wheat for immediate shipment. [redacted]

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**Reasons for the Large Purchases.** The heavy buying activity through early August has given the Soviets considerable flexibility in scheduling imports for the remainder of the year. With an estimated capability to import about 25 million tons of grain during

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<sup>10</sup> As of 1 January 1984, animal inventories were nearly 3 percent larger than on 1 January 1983. [redacted]

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January-June 1985, Moscow had the option of waiting several months—at which time it would have known its import needs more precisely—before reentering the market. Instead, after only a short wait, purchases resumed—including sizable quantities for immediate shipment. This suggests that Moscow foresees the need to import more than 45 million tons of grain because:

- A further deterioration in the grain crop is still possible before the end of the harvest in late October or early November.
- Production of potatoes—a close substitute for grain—is expected to be about 8 percent below last year's output.
- The low international grain prices now prevailing make this a good time to buy and provide the USSR an opportunity to rebuild stocks drawn down by a series of poor-to-mediocre harvests.

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We cannot rule out the possibility that Moscow is planning some action—such as stepped-up attacks against Afghan insurgents inside Pakistan, or the introduction of combat aircraft into Nicaragua—that it perceives could precipitate a US embargo. Soviet leaders may calculate that signed contracts for grain deliveries in the July-December period will permit the USSR to obtain the grain ahead of time or provide some insurance against the imposition of an embargo.

Although it is too early in the market year to estimate accurately total Soviet grain purchases, activity to date suggests that imports will approach or exceed record levels. Many Western grain analysts are projecting imports for the year in the 40-45-million-ton range. [redacted] Moscow will be in the market for as much as 48 million tons of grain, while another forecasts that imports could go as high as 50 million tons. The US Department of Agriculture currently estimates Soviet imports at 43 million tons. [redacted]

The USSR should have little difficulty—either financially or logistically—accommodating imports of 40-50 million tons. Hard currency reserves were at record levels earlier this year, and grain financing is easily available. In addition, Moscow has already demonstrated a capability to import 50 million tons of grain annually and is continuing to upgrade its port offload-  
ing facilities. [redacted] 25X1

*The US Role.* Barring an embargo, the United States probably will supply the largest share of grain imported by the USSR during this market year. Less-than-favorable weather conditions in Canada and Argentina may prevent them from satisfying sharp increases in Soviet purchases while maintaining exports to their other customers. [redacted] the 25X1 Canadian Wheat Board (CWB) has been forced to turn away Soviet requests for wheat, and press reports indicate that the CWB told Moscow that Canada will be unable to deliver barley sold in May. Furthermore, non-US supplies of coarse grain will be tight until spring, when Southern Hemisphere grain becomes available. With Soviet purchases from the United States as of late August already greater than the 10.4 million tons imported in all of MY 1983/84, total MY 1984/85 purchases from the United States could rise to at least 15 million tons, even if overall Soviet imports are limited to 45 million tons. With larger imports, US sales could go still higher. [redacted]

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## Appendix A

### The 1983 Agricultural Year in Retrospect

Last year's grain harvest in the Soviet Union totaled an estimated 195 million tons, the best since 1978, when grain production set a record of 237 million tons. The crop season got off to a poor start when drought conditions caused a major shortfall in winter grain sowings. With the onset of spring, however, the outlook turned around and remained mostly favorable through the harvest. Spring sowing progressed at a near-record pace, weather conditions during the summer were generally good, [redacted]

[redacted] Excessive rainfall in Siberia during the end of the harvesting campaign, however, probably caused some fields to be abandoned, resulting in minor crop losses. [redacted]

The exact size of the 1983 Soviet grain crop is still unknown. General Secretary Chernenko stated in his early March election speech that production "exceeded 190 million tons." In late March, a middle-level official from the Ministry of Agriculture told US Embassy officers that the crop was 10 million tons "below average." His statement, made in the context of a comparison with the 1976-80 period, implies a harvest of 195 million tons. The USSR has not published overall grain production, yield, or state purchase statistics since 1980. [redacted]

The harvest results of the major nongrain crops in the USSR were mixed in 1983. Potatoes and sugar beets registered gains for the second and third consecutive years, respectively. Cotton, sunflower seed, and vegetable crops, however, fell slightly from 1982 levels. [redacted]

Last year's harvest of selected forages—hay, haylage, silage, and grassmeal—surpassed the 1982 record. Moreover, because most of the harvesting was carried out under favorable weather conditions, forage quality increased as well. [redacted]

The livestock sector had a banner year in 1983. Meat and milk output achieved new highs of 16 million tons and 96.4 million tons, respectively. Growth in these crucial products occurred not only because of record

numbers of livestock, but also because of substantial increases in feed supplies, particularly grain and forages. Meat and milk production per animal rose last year—reversing a four-year decline—principally because of larger feed rations. [redacted] 25X1

Soviet grain imports during the 1983/84 market year (1 July 1983–30 June 1984) totaled 32.0 million tons, up 500,000 tons from the previous year, according to the US Department of Agriculture.<sup>11</sup> Wheat imports were pegged at 20.5 million tons, and coarse grains at 11.5 million. In MY 1983/84, the United States regained its position as the largest supplier of grain to the USSR. With sales of 10.4 million tons, the United States captured one-third of the Soviet grain market, far below the three-fourths share it held in MY 1978/79, before the partial grain embargo, but up from a 20-percent share in MY 1982/83. The rebound in US grain sales to the Soviet Union was due primarily to the signing last summer of a new US-USSR Long-Term Grain Agreement (LTA), which raised minimum Soviet grain purchases to 9 million tons compared to the 6-million-ton requirement of the previous LTA. Under the terms of the new agreement, which began on 1 October 1983 and extends for five years, the USSR is to purchase annually a minimum of 9 million tons of wheat and corn in approximately equal quantities. As much as 1 million tons of the 9-million-ton minimum can be satisfied by purchasing 500,000 tons of soybeans and/or soybean meal. A maximum of 12 million tons of wheat and corn can be purchased without prior consultation with the United States Government. [redacted] 25X1

<sup>11</sup> This estimate excludes rice imports and grain purchases made on Soviet account for reexport to client states. If these purchases are included, imports for MY 1983/84 total an estimated 35.5 million tons, the same as the previous year. [redacted] 25X1

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**Appendix B**

**USSR: 1984 Prospects for Major Nongrain Crops**

Prospects for the major nongrain crops in the Soviet Union—sunflowers, sugar beets, potatoes, vegetables, and cotton—are mixed as of late August.<sup>12</sup> The production of sunflowers and sugar beets is expected to be above the average of the past five years, while that of potatoes and cotton is estimated to be slightly below. An average vegetable harvest is now likely.

[redacted]

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**Sunflowers**

We estimate the 1984 sunflower harvest in the USSR at 5.3 million tons, an improvement over last year's average crop of 5.04 million tons but well below the 6.6-million-ton plan. Soviet press reporting indicates that about one-third of the 4.2 million hectares sown to sunflowers this year are being cultivated with improved technological methods<sup>13</sup> that the Soviets claim increase yields by more than 30 percent over traditional methods. In addition, plantings of new varieties that are more resistant to disease have been increased somewhat. Nevertheless, we expect the Soviets will not achieve their plan because of continued seed problems and the diseases often associated with the cool, wet weather that has prevailed this season in the western European USSR. Moreover, the drought conditions during May in the Volga Valley and adjacent regions will adversely affect production there [redacted]

**Sugar Beets**

We anticipate a second consecutive above-average harvest of sugar beets in 1984 of some 80 million tons. According to data released by the USSR Central Statistical Administration, sowing was completed on time over an area of about 3.5 million hectares. The

<sup>12</sup> Estimates are based on local press articles, reports from US agricultural attaches, and imagery [redacted]

[redacted] In addition, a weather regression yield model, consisting of a time trend term and a departure from trend due to weather effects term, is employed for all major nongrain crops. [redacted]

<sup>13</sup> These methods, referred to by the Soviets as Industrial Crop Technology, call for the provision of the necessary equipment, chemicals, fuel, and spare parts at the proper time [redacted]

Soviets reported that a record 60 percent of the crop is being cultivated with improved methods and that three-fourths of the total area has been sown with high-quality seeds. In addition, soil moisture conditions have been generally good in the major producing areas of the Ukraine and North Caucasus. The major limiting factor has been the extremely hot, dry conditions in the Volga Valley and Central Black Earth regions, which together account for about one-fifth of annual sugar beet output. [redacted]

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**Potatoes**

Crop conditions as of late August point to a potato harvest this year of about 77 million tons, slightly below average and well below last year's showing of 83.1 million tons. One of the primary factors having a negative impact on potential yields is the waterlogged field conditions that have persisted for much of the season in the western Ukraine and southern Belorussia, two important potato-growing regions. Such conditions are not as widespread as in 1980, however, when total production plummeted to 67 million tons. Except for additional damage caused by the May drought in the Volga region, prospects for the remaining areas—where temperatures have been cool and moisture supplies adequate—are generally good. [redacted]

[redacted]

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**Vegetables**

We estimate an average vegetable crop of some 28 million tons, down slightly from the 29.1-million-ton crop harvested in 1983. Recent weather conditions have been mostly favorable in the major vegetable-producing areas of the Ukraine, North Caucasus, and Central Region, although the cool, wet weather of late spring and early summer probably caused some weed and disease problems. Except for planting progress reports, the Soviet press has provided virtually no information on the condition of the crop [redacted]

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**Table 3**  
**USSR: Nongrain Crops**

	Area (million hectares)	Yield (quintals per hectare)	Production (million tons)
<b>Sunflowers</b>			
1979-83 average	4.3	11.7	5.0
1982	4.2	12.6	5.3
1983	4.3	11.7	5.0
1984 plan	NA	NA	6.6
1984 estimate	4.2	12.6	5.3
<b>Sugar beets</b>			
1979-83 average	3.6	206.4	74.3
1982	3.5	204.3	71.5
1983	3.5	234.3	82.0
1984 plan	NA	NA	94.2
1984 estimate	3.5	228.6	80.0
<b>Vegetables</b>			
1979-83 average	1.8	155.0	27.9
1982	1.8	166.7	30.0
1983	1.8	161.7	29.1
1984 plan	NA	NA	30.1
1984 estimate	1.8	155.6	28.0
<b>Potatoes</b>			
1979-83 average	6.9	113.5	78.3
1982	6.9	113.3	78.2
1983	6.9	120.4	83.1
1984 plan	NA	NA	NA
1984 estimate	6.9	112.0	77.0
<b>Cotton</b>			
1979-83 average	3.2	29.7	9.5
1982	3.2	29.1	9.3
1983	3.2	28.9	9.2
1984 plan	NA	NA	9.4
1984 estimate	3.2	28.9	9.2

### Cotton

Despite getting off to a good start, it now appears that the USSR is headed for a cotton harvest this year of about 9.2 million tons, below both the 1979-83 average of 9.5 million tons and the plan of 9.4 million tons. Soviet agricultural officials from Uzbekistan and Turkmenia—which produce three-fourths of the total harvest—told the US agricultural attache in mid-June that sowing was completed within the optimum time periods. They also said that early plant growth was better than a year ago because of good soil moisture and the application of more fertilizer. In late July, however, many of the principal growing areas were hit with extremely hot temperatures during flowering, hindering pollination and probably causing a higher-than-normal incidence of sterility, as occurred in 1983. This was subsequently corroborated by a Soviet press report that stated boll formation was lagging well behind that of recent years.

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